Appendix B
Glossary

B-1. Terms

ACTIVITY: A measure of the rate at which a material is emitting nuclear radiations; usually given in terms of the number of nuclear disintegrations occurring in a given quantity of material over a unit of time; the standard unit of activity is the Curie (Ci) which is equal to 3.7 x 10^{10} disintegrations per second.

ALPHA RADIATION: One of the particles emitted in radioactive decay; identical in mass with the nucleus of the helium atom; loses energy rapidly when traversing through matter.

BACKGROUND RADIATION: Radiation in the environment from naturally occurring radioactive isotopes, cosmic radiation, and fallout from man's activities such as nuclear weapons testing.

BETA RADIATION: One of the particles emitted during radioactive decay: negatively charged beta particles are identical in mass and electrical charge to the electron, positively charged type is called a positron.

BUFFER ZONE: A portion of the disposal site that is controlled by the licensee and that lies under the disposal units and between the disposal units and the boundary of the site.

CURIE (Ci): A unit of radioactivity defined as the amount of a radioactive material that has an activity of 3.7 x 10^{10} disintegrations per second (alps). The SI unit is the Becquerel (Bq); equal to 1 dps.

DECONTAMINATION: The selective removal of radioactive and/or hazardous material from a surface or from within another material.

DOSE: The accumulated quantity of ionizing radiation to which a living organism is exposed during an interval of time. Modified by length of exposure time, type of exposed organism, manner of exposure, exposed tissues of the organism, intensity, and nature of radiation.

EXPOSURE: A measure of the ionization produced in air by X or gamma radiation. The special unit of exposure is the Roentgen. Acute exposure generally refers to a high level of exposure of short duration; chronic exposure is lower-level exposure of longer duration.

GAMMA RADIATION: Electromagnetic waves emitted from the nucleus during radioactive decay; of much higher energy than natural X-radiation; highly penetrating.

GRAY (Gy): An SI unit of absorbed dose. One Gray is equal to 100 rads.

GROUT: Fluid or semifluid material, often containing portland cement, which sets up into a solid state and provides mechanical stabilization or water flow control.

HALF-LIFE: The time in which half the atoms of a particular radioactive substance disintegrate to another nuclear form.

HAZARDOUS WASTE: Those wastes designated as hazardous by Environmental Protection Agency regulations in 40 CFR 261.

IN SITU: In the natural or original position; used to refer to in-place processes at a treatment, storage, or disposal site.

INADVERTENT INTRUDER: A person who might occupy a disposal site after closure and engage in normal activities, such as agriculture, dwelling construction, or other pursuits.

INTRUDER BARRIER: A sufficient containment of the waste that inhibits human contact with waste and helps to ensure that radiation and chemical exposures to an inadvertent intruder will meet the performance objectives set forth in 10 CFR 61 or 40 CFR 261; or engineered structures that provide equivalent protection to the inadvertent intruder.

IONS: Atomic particle, atom, or chemical radical bearing an electrical charge, either negative or positive.

IONIZING RADIATION: Any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter.

ISOTOPES: Nuclides having the same number of protons in their nuclei, and hence the same atomic number, but differing in the number of neutrons, and thereby differing in the mass number. Identical chemical properties exist between isotopes of a particular element.

LEACHATE: A solution containing dissolved and finely suspended solid matter and microbial waste products resulting from groundwater or infiltrating surface water seepage through waste.

LOW-LEVEL RADIOACTIVE WASTE: Radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or by-product materials in section 11. *e* (2) of the Atomic Energy Act.

MIXED WASTE: Waste materials containing or having a high probability of containing both hazardous waste materials and low-level radioactive waste materials either as separate components or single components possessing both hazardous and radioactive natures.

RAD: The unit of absorbed dose of ionizing radiation equal to 100 ergs per gram or 0.01 joule per kilogram.

RADIOACTIVITY: The property of certain naturally unstable isotopes to spontaneously emit particles or gamma radiation, or to emit X-radiation following orbital electron capture, or to undergo spontaneous fission.

REM: A unit of dose equivalent. The dose equivalent in reins is numerically equal to the absorbed dose in rads multiplied by the quality factor, the distribution factor, and any other necessary modifying factors.

REMEDIAL ACTION: Defined by CERCLA, Section 101(24), as "those actions taken . . . in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment. "

ROENTGEN: The special unit of exposure. One Roentgen equals 2.58×10^{-4} coulomb per kilogram of air.

SIEVERT (Sv): An SI unit of dose equivalent and effective dose equivalent. One sievert is equal to 100 reins.

TRANSURANIC WASTE: Waste that, without regard to source or form, at the end of institutional control periods, is contaminated with alpha-emitting radionuclides of atomic number greater than 92 and half-lives greater than 20 years in concentrations greater than 100 nanoCuries per gram, or has a smearable alpha contamination greater than 4,000 dpm/cm^2 averaged over the accessible surface.

TREATMENT: Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste nonhazardous or less hazardous; safer to transport, store or dispose of; or amenable to recovery, amenable for storage, or reduced in volume.

X-RADIATION, X-RAY: Electromagnetic waves produced outside the atomic nucleus which are of higher energy than visible light but less energy than gamma radiation.

ZEOLITES: Hydrated silicates of aluminum and sodium and/or calcium which are used as ion exchange resins.

B-2. Abbreviations

AEC	Atomic Energy Commission
ALARA	As low as reasonably achievable
ALI	Annual limits on intake
AMCCOM	Armament, munitions, and chemical command
ARAR	Applicable or relevant and appropriate requirement
BRC	Below regulatory concern
CDAP	Chemical data acquisition plan
CDQM	Chemical data quality management
CE	Corps of Engineers
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
DAC	Derived Air Concentration
DoD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
EM	Engineer Manual
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
GM	Geiger Mueller
HEPA	High efficiency particulate air
HLW	High level waste

HQUSACE	Headquarters, U.S. Army Corps of Engineers
IAEA	International Atomic Energy Agency
ICRP	International Commission on Radiation Protection
ISV	In situ vitrification
JHCM	Joule heated ceramic melter
LLRW	Low level radioactive waste
MCL	Maximum contaminant level
MCX	Mandatory Center of Expertise
MW	Mixed waste
NARM	Naturally occurring and accelerator-produced radioactive material
NCP	National Contingency Plan
NORM	Naturally occurring radioactive material
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration
PA	Preliminary assessment
PCR	Plasma centrifugal reactor
PPE	Personal protective equipment
PRP	Potentially responsible party
QA	Quality assurance
QC	Quality control
RCRA	Resource Conservation and Recovery Act of 1976
REM	Roentgen Equivalent Man
RFI	RCRA Facility Investigation
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
SEG	Scientific Ecology Group, Inc.
SSHP	Site Safety and Health Plan
TCLP	Toxicity characteristic leaching procedure
TLD	Thermoluminescent Dosimeter
TRU	Transuranic
USACE	U.S. Army Corps of Engineers

B-3. Bibliography of Regulatory Documents

CODE OF FEDERAL REGULATIONS

10 CR 20:	Standards for Protection Against Radiation
10 CFR 61:	Licensing Requirements for Land Disposal of Radioactive Wastes
10 CFR 71:	Transport of Radioactive Wastes
29 CFR 1910:	Safety and Health Regulations for Workers Engaged in Hazardous Waste Operations
29 CFR 1926:	Safety and Health Regulations for Construction
29 CFR 1919:	Occupational Safety and Health Standards
40 CFR 61:	National Emission Standard for Radionuclide Emissions from Department of Energy Facilities
40 CFR 191:	Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High Level, and Transuranic Radioactive Wastes
40 CFR 192:	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings
40 CFR 240:	Guidelines for the Thermal Processing of Solid Wastes
40 CFR 241:	Guidelines for the Land Disposal of Solid Wastes
40 CFR 249:	Guideline for the Federal Procurement of Cement and Concrete Containing Fly Ash
40 CFR 261:	Hazardous Waste Management System: Identification and Listing of Hazardous Waste
40 CFR 262:	Standards for Generators of Hazardous Waste

40 CFR 263:	Standards for Transporters of Hazardous Wastes
40 CFR 264:	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265:	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 267:	Interim Status Standards for Owners and Operators of New Hazardous Waste Land Disposal Facilities
40 CFR 268:	Land Disposal Restrictions
40 CFR 280:	Underground Storage Tanks
49 CFR 171-179:	Transportation of Radioactive Waste

CONGRESSIONAL ACTS

Clean Air Act
Public Law 88-206

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
Public Law 96-510

Superfund Amendments and Reauthorization Act of 1986 (SARA, amending CERCLA)
Public Law 99-499

Clean Water Restoration Act
Public Law 89-753

Federal Water Pollution Control Act
Public Law 86-70

National Environmental Policy Act (NEPA)
Public Law 91-190

Resource Conservation and Recovery Act (RCRA)
Public Law 94-580

Hazardous and Solid Waste Amendments of 1984 (HSWA)
(amending RCRA)
Public Law 98-616

Safe Drinking Water Act
Public Law 93-523
Solid Waste Disposal Act (p. 2-30)

Toxic Substances Control Act
Public Law 94-469

Water Quality Act
Public Law 89-234

National Low Level Radioactive Waste Policy Act of 1980 (LLRWPA)
Public Law 96-573

Low Level Radioactive Waste Policy Act Amendments of 1985 (LLRWPAA)
Public Law 99-240

Atomic Energy Act of 1954 (and amendments)

Energy Reorganization Act of 1974

Solid Waste Disposal Act